Three genera of serpulids having toothed setae in the first somite have been described, all found in water supposedly fresh, but probably more or less brackish. *Mercierella* Fauvel (1922, pp. 424–430) was originally found in a canal at Caen, France, and *Ficopomatus* Southern (1921, p. 655) was collected in Chilka Lake, India. *Sphaeropomatus* differs from *Mercierella* in not having a prominent reflexed collar and in having an operculum devoid of spines. As figured by Munro (1924, p. 655), *Mercierella* has prominent spines on the surface of the operculum (fig. 6). The toothed setae are similar in the two genera as are the uncini, but from figures given by Fauvel and Munro I infer that the latter are much smaller in *Sphaeropomatus*. The tube of *Mercierella* has at intervals circular shelf-like rings which do not appear in *Sphaeropomatus*. For *Ficopomatus* Southern does not give the character of the collar, but the operculum (fig. 8) and the toothed setae are very different. A comparison of the two setae is given in figs. 3 and 7. The tube of *Ficopomatus* is described as flattened along the line of attachment and as having a longitudinal ridge along its outer border.

The type is No. 20074 in the collections of the United States National Museum.

The specimens were sent me by Dr. W. L. Schmitt of the U. S. National Museum, who found them when studying the shrimp *Macrobrachium* from the Miami River, Florida. I am also indebted to Dr. Schmitt for portions of the carapace of the shrimp on which were a number of tubes. Acknowledgment is made to Mr. C. R. Shoemaker for sending the precise diagnosis of *Ficopomatus*.

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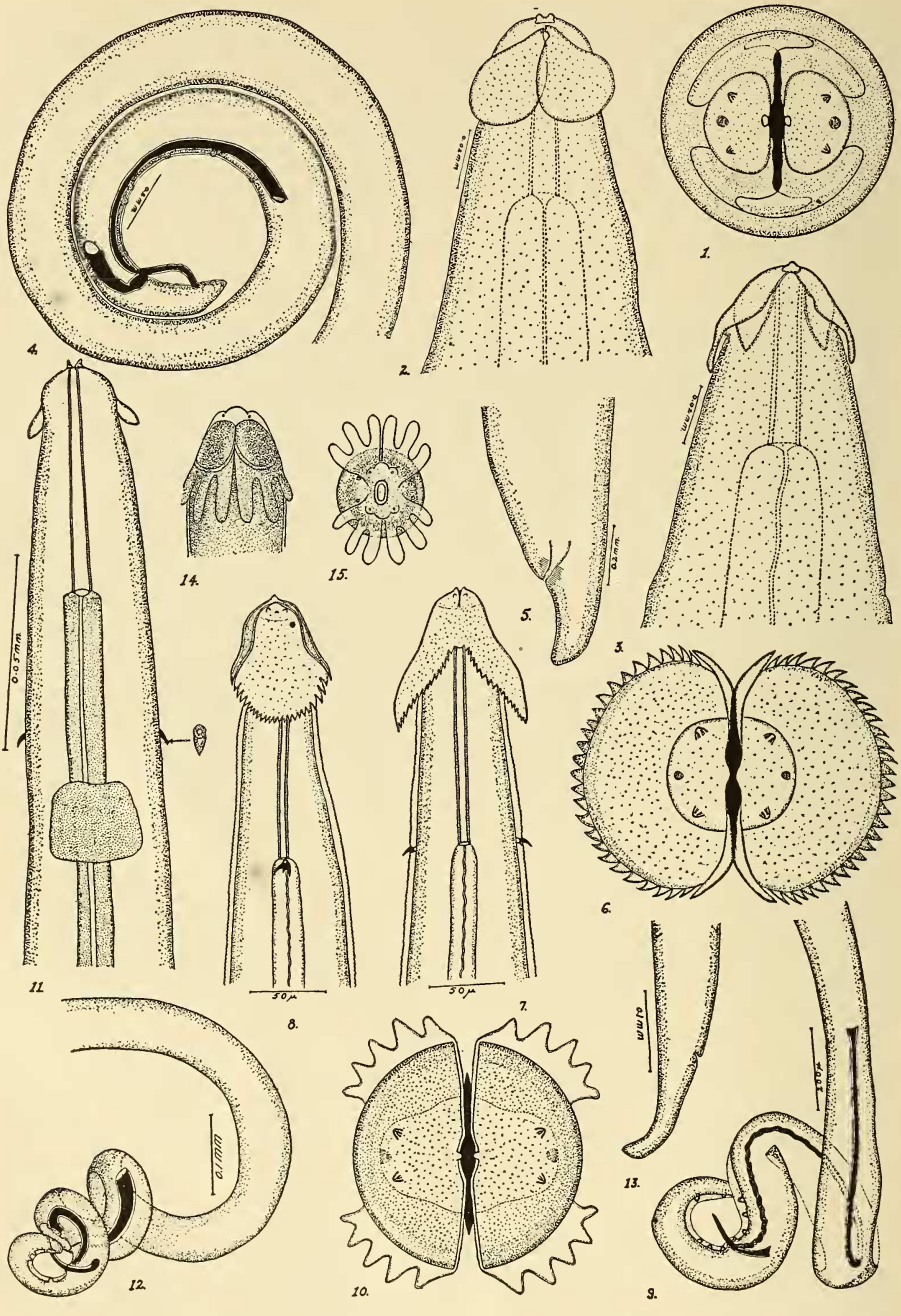
ZOOLOGY.—*Descriptions of three bird nematodes, including a new genus and a new species.*[1]

EVERETT E. WEHR, Bureau of Animal Industry. (Communicated by ELOISE B. CRAM.)

I

The first lot of nematodes to be described and figured in this paper was collected from a king rail, *Rallus elegans*, by Dr. Albert Hassall in 1893. The preserved specimens, consisting of two males and three females and representing a new species, *Schistorophus cucullatus*, were

[1] Received March 12, 1934.



Figs. 1–15.—For explanation see opposite page.

in excellent condition for study. This paper includes, apparently, the first record of a species of the genus *Schistorophus* to be recorded from this continent. The members of this genus represent a very interesting and little studied group of nematodes.

Schistorophus cucullatus new species

Diagnosis.—Schistorophus: Oral opening dorso-ventrally elongated, surrounded by 2 pseudolabia from which project anteriorly 2 cuticular processes, 1 on each lateral side of mouth opening (Fig. 1); interlabia absent. A pair of submedian papillae and an amphid on each pseudolabium. Two dorsal and 2 ventral flap-like cuticular structures arranged in form of hood surrounding anterior extremity of body just posterior to pseudolabia (Figs. 2 and 3), 1 flap of each pair slightly overlapping the other in dorsal and ventral views (Fig. 2). Buccal cavity cylindrical and well developed, its wall heavily chitinized. Esophagus divided into an anterior muscular and a posterior glandular portion.

Male 10 to 11 mm. long and 77μ in maximum width. Buccal cavity about 100μ long. Anterior portion of esophagus about 810μ, posterior portion 1.42 mm., long. Nerve ring 220μ from anterior end of body. Posterior extremity spirally coiled in ventral direction, tip abruptly pointed. Caudal alae narrow, about 1 mm. long. Six pairs of preanal and 4 pairs of postanal papillae (Fig. 4). Spicules unequal and dissimilar, the longer 1.1 mm. long and terminating in a bluntly rounded tip, the shorter about 300μ long, broad and twisted at distal end.

Female 28 mm. long and 315μ in maximum width. Buccal cavity about 115μ long. Anterior portion of esophagus presenting a laterally displaced loop near middle of length due, perhaps, to fixation, and measuring in a straight line about 810μ long; posterior portion 1.88 mm. long and only slightly wider than anterior portion. Nerve ring about 220μ from anterior end of body. Posterior extremity abruptly narrowed at level of anus, tip abruptly pointed (Fig. 5). Vulva 14.3 mm. from anterior end of body, not prominent. Vagina directed posteriorly. Tail about 300μ long. Eggs 48μ by 32μ, with very thick shells, not embryonated *in utero*.

Host.—Rallus elegans.

Location.—Underneath tunic lining of gizzard.

Locality.—North America (United States [Virginia]).

Type specimens (male and female).—U.S.N.M. Helminthological Collection, No. 6268-A.

Paratypes.—U.S.N.M. Helminthological Collection No. 6268-B.

Figs. 1–5.—*Schistorophus cucullatus.* Fig. 1.—Head, en face view. Fig. 2.—Anterior extremity, dorsal view. Fig. 3.—Anterior extremity, lateral view. Fig. 4.—Posterior extremity of male, lateral view. Fig. 5.—Posterior extremity of female, lateral view. Figs. 6–9.—*Stegophorus stellae-polaris.* Fig. 6.—Head, en face view. Fig. 7.—Anterior extremity, dorsal view. Fig. 8.—Anterior extremity, lateral view. Fig. 9.—Posterior extremity of male, lateral view. Figs. 10–15.—*Yseria coronata.* Fig. 10.—Head, en face view. Fig. 11.—Anterior extremity, dorsal view. Fig. 12.—Posterior extremity of male, lateral view. Fig. 13.—Posterior extremity of female, lateral view. Fig. 14.—Head, en face view. After Drasche, 1884. Fig. 15.—Head, lateral view. After Drasche, 1884.

Molin (1) described a species of nematode, *Histiocephalus laciniatus*, from the gizzard of the rail, *Rallus cayennensis;* this species was later transferred to the genus *Schistorophus* by Railliet (2) in 1916. However, inasmuch as *Schistorophus laciniatus* is described as 7 mm. and 14 mm. long, in case of male and female respectively, with head encircled by a fringe of long slender processes and with male tail bearing 24 papillae, the American material here described is considered distinct from that species. The possibility is recognized, however, that *S. cucullatus* may prove to be a synonym of *S. laciniatus* should the type material of the latter species be more completely described. *Schistorophus cucullatus* may be differentiated from the other better described species of this genus by its having fewer papillae on tail of male, by its much larger size, and its differently shaped head structures.

II

The second lot of nematodes was collected by the Bureau of Biological Survey from the fulmar, *Fulmarus glacialis glacialis*, and the Brunnich's murre, *Uria lomvia lomvia*, in the arctic region, the locality designation being that given below. The writer has identified this material as a species described by Parona (3) as *Histiocephalus stellae-polaris*.

The systematic position of *H. stellae-polaris* has been uncertain because of its too meagre description. The species was placed in *Streptocara* by Skrjabin (4) and in *Yseria* by Gedoelst; (5) however, according to the more complete description of this species herein given, it cannot be allocated to any of these genera, for the reasons discussed below. As a result a new genus, *Stegophorus*, has been created for it.

Stegophorus new genus

Diagnosis.—Acuariidae: Oral opening dorso-ventrally elongated, surrounded by 2 pseudolabia, each bearing a pair of submedian papillae and a small amphid (Fig. 6). A helmet-like cuticular structure surrounding head, not extending farther anterior than base of pseudolabia; posterior margins denticulated. Buccal cavity cylindrical, elongated; its wall cross-striated. Esophagus consisting of an anterior short, narrow, muscular portion and a posterior long, broad, glandular portion. *Male*: Caudal alae well developed, terminating slightly anterior to tip of tail. Four pairs of preanal and 5 pairs of postanal pedunculated papillae. Spicules very unequal and dissimilar, the longer one assuming a braided or closely twisted condition in posterior half. Gubernaculum absent. *Female:* Vulva postequatorial. Uteri divergent. Eggs embryonated *in utero.*

Type species.—*Stegophorus stellae-polaris* (Parona, 1901) n. comb.

Stegophorus stellae-polaris (Parona, 1901) n. comb.

Synonyms.—*Histiocephalus stellae-polaris* Parona, 1901; *Streptocara stellae-polaris* (Parona, 1901) Skrjabin, 1916; *Yseria stellae-polaris* (Parona, 1901) Gedoelst, 1919.

Diagnosis.—Stegophorus: Helmet-like cuticular structure (Figs. 7 and 8) surrounding anterior end of body, 87.6μ long, and denticulated on free margins; this structure not in form of a collarette around base of pseudolabia as in *Yseria*, *Streptocara*, and *Seuratia*. Extremities of body attenuated, the anterior more gradual than posterior. Cervical papillae tricuspid, situated at level of junction of buccal cavity with anterior portion of esophagus. Nerve ring near equator of anterior portion of esophagus.

Male 5 to 6 mm. long and 102μ in maximum width. Buccal cavity about 190μ long. Anterior portion of esophagus 400μ long and 15 to 20μ wide; posterior part 1.28 mm. long and about 30 to 40μ wide. Cervical papillae (Fig. 8) about 180μ from anterior end of body. Spicules (Fig. 9) very unequal and dissimilar, the longer 1.6 to 2.43 mm. long, slender, enlarged proximally and pointed distally, with the posterior half, except tip, appearing as a twisted rope, the twisting grading into a braided condition in the distal third; shorter spicule 65 to 100μ long, slightly curved and gradually narrowing towards tip. Caudal alae relatively broad and long, supported by 4 pairs of preanal and 5 pairs of postanal papillae, the latter arranged as follows: 3 pairs just posterior to anal opening, 1 pair near tip of tail, and 1 pair slightly more than one-half the distance from anal opening to tip of tail.

Female 12 to 16 mm. long and 148μ in maximum width. In specimen 13 mm. long, buccal cavity 200μ long, anterior portion of esophagus 511μ long and about 20 to 25μ wide, posterior portion 1.38 mm. long and about 35 to 45μ wide, cervical papillae 204μ and vulva 7.05 mm. from anterior end of body; position of latter indicated by a slight cone-shaped prominence. Vagina directed posteriorly. Amphildelphic. Posterior extremity obtusely rounded, curved slightly ventrad. Anal opening about 200μ from tip of tail. Eggs 44μ by 24μ, embryonated *in utero*.

Hosts.—Fulmarus glacialis glacialis, *Thalassodroma pelagica*, *Uria lomvia lomvia*.

Location. Not stated; probably underneath tunic lining of gizzard.

Locality.—Arctic region and British Isles. No specific locality in arctic region was designated by Parona; the recent collections were made at Lat. 73.20 N., Long. 17.25 W. and Lat. 72.00 N., Long. 13.30 W., for *Uria lomvia lomvia*. Lat. 61.00 N., Long. 32.10 W., for *Fulmarus glacialis glacialis*, according to the Bureau of Biological Survey. Baylis (6) reported *Streptocara? stellae-polaris* from the fulmar petrel (*Fulmarus glacialis*) in the North Sea, and the storm-petrel (*Thalassodroma pelagica*) in Norfolk, England

The above redescription is based on specimens in the U.S.N.M., Bureau of Animal Industry, Helminthological Collection, Nos. 33233 and 33234.

Parona described *Histiocephalus stellae-polaris* on the basis of a single female specimen from the fulmar, *Fulmarus glacialis*, taken in the Arctic region. His very meagre illustrated description (taken from Cram (7) is as follows:

"Head with two large lips and a dilation in manner of a hood with denticulate margin. A tricuspid process a little posterior to this dilation. Male unknown. Female 16 mm. long. Anus at caudal extremity, the latter obtuse. Vulva at middle of body. Eggs oval, containing an embryo when deposited."

The specimens examined by the present writer which were collected from the same host and in the same general locality as Parona's specimen, possess characters that identify it with the latter's species; *Histiocephalus stellae-*

polaris has, therefore, been redescribed from this additional material. The erection of a new genus was considered necessary because of the absence of a swollen bulla in the cervical region, such as is present in species of *Histiocephalus*, and because of the helmet-like structure covering the head, and the peculiar structure of the posterior half of the long spicule, differing from these characters in the genera *Histiocephalus*, *Streptocara*, and *Yseria*.

III

The third lot of nematodes considered here consisted of a number of small and very delicate specimens, both males and females, collected in May, 1930, by E. B. Cram from the gizzard of a king rail, *Rallus elegans*, killed in St. Mary's County, Maryland. These have been identified as *Yseria coronata* (Molin, (8) 1860) Gedoelst, (5) 1919. From this material, it is possible to furnish a more adequate description than has been previously available.

Yseria coronata (Molin, 1860) Gedoelst, 1919

Synonyms.—Spiroptera coronata Molin, 1860; *Histiocephalus coronatus* (Molin, 1860) Skrjabin, 1916.

Diagnosis.—Yseria: Body slender, delicate. Oral opening dorso-ventrally elongated, surrounded by 2 pseudolabia with 2 finger-like cuticular processes projecting anteriorly from their internal margin near the oral opening (Fig. 10). Each pseudolabium bearing near its base 2 submedian papillae and an amphid. Cephalic ornamentation in form of 4 posteriorly directed flaps, each flap divided into 3 or 5 finger-like processes (Figs. 10, 14 and 15). Body slightly constricted at base of head. Cervical papillae (Fig. 11) consisting of only a single tooth. Buccal cavity long, cylindrical. Esophagus divided into an anterior short and a posterior long portion.

Male 8 to 9.5 mm. long and 76μ in maximum width. Buccal cavity (Fig. 11) about 68μ long. Anterior muscular portion of esophagus 680μ, posterior glandular portion 1.94 mm., long. Nerve ring surrounding anterior portion of esophagus about 140μ from anterior extremity. Posterior extremity spirally coiled (Fig. 12) in a ventral direction, and gradually narrowing to a bluntly rounded point. Caudal alae terminating slightly anterior to tip of tail. At least 8 pairs of caudal papillae: 3 pairs of preanal and 5 pairs of postanal (it is possible that 1 or 2 additional pairs of caudal papillae were obscured because of the extremely coiled condition of the posterior extremity). Spicules unequal and dissimilar, the longer about 300μ long, relatively broad at the proximal end; shorter spicule about 88μ long, knob-like at proximal end, pointed at distal end.

Female 12 to 21 mm. long and 85 to 94μ in maximum width. In a specimen measuring 21 mm. long, buccal cavity 85μ long, anterior muscular portion of esophagus about 780μ, posterior glandular portion 2.42 mm., long, nerve ring 146μ and vulva 10.3 mm. from anterior extremity of body. Posterior extremity (Fig. 13) bent slightly dorsad, bluntly rounded. Anal opening 1.72 mm. from posterior end. Eggs 44μ by 17μ.

Hosts.—Chloroceryle americana (syn., *Alcedo americana*), *Rallus cayennensis*, and *R. elegans*.

Location.—Gizzard.

Locality.—South America (Brazil) and North America (United States [Maryland]).

Redescription based on specimens in U.S.N.M., Bureau of Animal Industry, Helminthological Collection No. 29839.

Drasche (9) figured (Figs. 14 and 15) and described this species as follows (translated): "Head with oval mouth opening. Two large lateral lips, each divided into 3 parts, the lateral ones bearing small papillae. Two posteriorly directed processes on each side of head, each process divided into 3 finger-like projections. Four submedian papillae. Tail of male incomplete."

Because of the lack of knowledge concerning the number of caudal papillae possessed by the male, Drasche left this species in the genus *Spiroptera* as originally placed by Molin. He stated, however, that should the posterior extremity of the male of this species possess 4 preanal caudal papillae and unequal spicules, it would belong to the genus *Histiocephalus*. Skrjabin (4) later reallocated the species to that genus, although stating that its position there was doubtful. According to the present accepted diagnosis of the genus *Histiocephalus*, the cervical region is swollen into a bulla consisting of numerous longitudinal folds; this is not the case in *Yseria coronata*.

The presence of only a single tooth on the cervical papilla differentiates this species from *Y. californica* which is said to possess cervical papillae with 3 teeth each; the male of *Y. californica* is as yet undescribed, so that comparison of the two species is limited. The generic diagnosis of *Yseria* must now be modified with respect to the cervical papillae, to designate them as each having 1 to 3 cusps; also as regards the position of the vulva, to designate it as being slightly pre-equatorial or slightly post-equatorial.

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